PORTLAND HARBOR SUPERFUND SITE — UPDATE SUMMER 2011

LWG
LOWER WILLAMETTE GROUP

Plan for Sediment Cleanup Options Due by End of 2011

The next major milestone of the Portland Harbor Superfund Program will be a Draft Feasibility Study (FS) that evaluates the cleanup options for sediment and near shore areas of the Lower Willamette River. The FS is the "tool box" that the US Environmental Protection Agency (EPA) will use to draft a Proposed Plan for the cleanup of the lower eleven miles of the river.

The Draft FS will likely evaluate a range of remedial options including some combination of removal of localized sediments through dredging; construction of clean underwater caps over sediments to prevent release of contaminants to the river; and monitoring of natural systems at work in the river that, together with control of known sources, allows recovery over time. The Draft FS will also evaluate the possible application of innovative technologies including treatment.

In accordance with federal laws and EPA guidance the FS will:

- Describe remedial action objectives.
- Identify the geographic areas where one or more contaminants may pose unacceptable risk to human health or the environment.
- Identify potential cleanup levels based on federal and state laws and the human health and ecological risk assessments in the Remedial Investigation.
- Analyze the benefits, costs, and implementability of the possible cleanup methods.
- Recommend a range of alternatives and variations for implementing the cleanup.

It is important to remember that the FS will not:

- Provide fully designed remedies (e.g., dredging or capping boundaries)
- Select specific technologies (e.g., bucket vs. hydraulic dredge)
- Select contractors
- Select specific disposal sites

Results so far

The Lower Willamette River has changed dramatically over 150 years of industrial and urban use. A nine-year, nearly $90 million scientific investigation and analysis have shown that contamination found in the river sediments is associated with multiple sources in and upstream of the site. Sources include agricultural and urban development, industrial activities, and both past and current discharges and runoff into the river. Impacts to fish and wildlife in and near the river have been caused by physical changes and chemical contamination.

Four chemical groups primarily related to historical releases — polychlorinated biphenyls (PCBs), dioxin/furans, the pesticide dichloro-diphenyl-trichloroethane (DDT) and related breakdown products, and polycyclic aromatic hydrocarbons (PAHs) — account for most of the estimated potential human health and ecological risks in the site. Other chemicals present potential risks in localized areas.

The draft human health and ecological risk assessments (which are a part of the RI report) found that:

- PCBs are the most significant and widespread chemicals posing potential risks to humans and wildlife. However, there are other chemicals that potentially pose unacceptable risks.
- Ingestion of resident fish containing site-related chemicals represents the primary exposure pathway for risk to humans and aquatic mammals.
- Other exposure pathways, such as direct contact with sediment or water, present much lower risks to people.
- Risks to fish and wildlife which are unrelated to the Lower Willamette Site are also present upriver and downriver from the Portland Harbor Area.

The Lower Willamette Group (LWG)

The Lower Willamette Group (LWG) is composed of the ten parties who signed an agreement with EPA to conduct the remedial investigation and feasibility study of the site and four other parties who have contributed financially to the project.

The LWG is a small subset of potentially responsible parties (PRPs) identified by EPA. The members of the LWG are: Arkema Inc.; Bayer CropScience, Inc.; BNSF Railway Company; Chevron U.S.A. Inc.; City of Portland; ConocoPhillips Company; Gunderson LLC; Kinder Morgan Liquids Terminals; NW Natural; Evraz Inc. NA, dba Evraz Oregon Steel; Port of Portland; Siltronic Corporation; TOC Holdings Co.; Union Pacific Railroad Company.

The LWG work in the Portland Harbor area is one of many efforts focused on the greater Willamette River watershed. Separate initiatives that address water quality, public health advisories, and land use are being conducted under several other federal and state agency programs.

LWG
LOWER WILLAMETTE GROUP

Remedy selection criteria

The federal Superfund law uses nine criteria for remedy selection including effectiveness, implementability and cost. Protectiveness and compliance with laws are threshold criteria.

1. Overall protection of human health and environment
2. Compliance with applicable or relevant appropriate requirements of state and federal laws
3. Long-term effectiveness
4. Reduction of toxicity, mobility, and volume through treatment
5. Short-term effectiveness
6. Implementability
7. Cost
8. State acceptance
9. Community acceptance

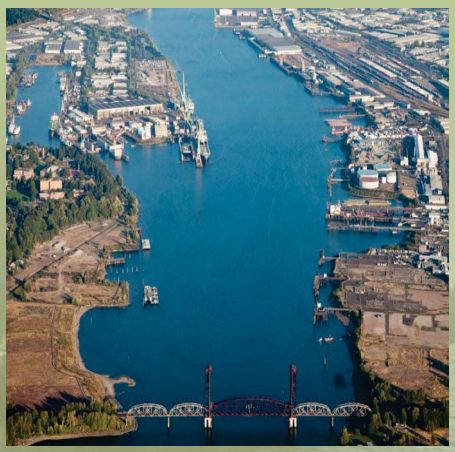
As required by EPA guidance, the FS will consider the first seven criteria and EPA will consider the last two using the FS information.

Cleanup standards/levels

Cleanup levels for the various media (sediment, surface water, etc.) will be based on existing state and federal laws and guidelines and the human health and ecological risk assessments. In selecting cleanup actions, EPA's Region 10 office will also consider risk management factors.

Source control and recontamination

Reducing the potential for recontamination of the river after cleanup actions have been implemented will be managed through the control of ongoing sources to the river. The Oregon Department of Environmental Quality is working on a joint source control strategy. The strategy calls for the control of known sources in the site before the time of the construction of the Portland Harbor Superfund Site cleanup remedies. Once remedies are implemented monitoring will assess whether recontamination from sources within the site is a problem. However, recontamination caused by upstream sources is beyond the scope of the Portland Harbor Superfund cleanup project.



Improving habitat

At the same time the cleanup work moves forward, separate efforts are underway to assess any damages to the natural resources (e.g. fish and wildlife) at the site. The natural resource damage assessment process is being conducted by federal, Tribal and state trustees with funding contributed by potentially responsible parties (PRPs).

PORTLAND HARBOR REMEDIAL INVESTIGATION/ FEASIBILITY STUDY TIMELINE

1997 | Preliminary Assessment/Site Investigation
2000 | Portland Harbor Superfund Site Placed on National Priority List
2001 | Lower Willamette Group Members Sign
2002 | Remedial Investigation Round 1 Sampling Performed
2004 | Remedial Investigation Round 2 Sampling Begins
2006 | Remedial Investigation Round 3 Sampling Begins
2007 | Comprehensive Round 2 Site Characterization Summary and Data Gaps Analysis Report Submitted to EPA
2009 | Draft Remedial Investigation Report Submitted to EPA for Review
2011 | Draft Feasibility Study Report Expected to be Submitted to EPA
TBD | EPA Record of Decision and Post-Record of Decision Cleanup and Monitoring Activities

STEPS IN THE SUPERFUND CLEANUP PROCESS

- Preliminary Assessment/Site Investigation
- Listing on the National Priority List
- Remedial Investigation/Feasibility Study
  - Scoping
  - Site Characterization
  - Human Health and Ecological Risk Assessment
  - Development and Screening of Alternatives
  - Treatability Investigations
  - Detailed Alternatives Analysis
- Record of Decision
- Remedial Design/Remedial Action
- Construction Completion
- Post Construction Completion
- Deletion of Site from National Priority List

For More Information

www.lwgportlandharbor.org